

CLAIMS

1. A vane-type hydraulic motor comprising:
a rotor having a main shaft and a plurality of
5 vanes;
a cam casing having a chamber for rotatably
housing said rotor;
a first port and a second port for supplying a
working fluid into said chamber and discharging the
10 working fluid from said chamber;
a bypass path for allowing the working fluid to
flow from a bearing portion supporting said main shaft
through said bypass path; and
a drain port for discharging the working fluid
15 to the exterior;
wherein said drain port and said bypass path
communicate with each other to allow the working fluid
flowing from said bearing portion through said bypass
path to be discharged from said drain port to the
20 exterior.

2. A vane-type hydraulic motor according to
claim 1, further comprising:
a block having a third port and a fourth port
25 which communicate with said first port and said second
port, respectively; and
a port switching mechanism provided in said
block for switching a flow direction of the working fluid
to allow said bypass path to communicate with a low-
30 pressure one of said third port and said fourth port.

3. A vane-type hydraulic motor according to
claim 2, wherein said port switching mechanism comprises
a rod pin insertion hole provided in said block and

communicating with said bypass path, and a rod pin slidably inserted in said rod pin insertion hole, and said rod pin is moved depending on a differential pressure of the working fluid between said third port and
5 said fourth port to allow said bypass path to communicate with a low-pressure one of said third port and said fourth port.

4. A vane-type hydraulic motor according to
10 claim 3, wherein said rod pin insertion hole has a small-diameter portion having seal surfaces at both end portions thereof, said rod pin has seal surfaces facing said seal surfaces of said small-diameter portion, respectively, and when said rod pin is moved toward a
15 low-pressure side, said seal surface of said rod pin at a high-pressure side is brought into contact with said seal surface of said small-diameter portion at a high-pressure side.

20 5. A vane-type hydraulic motor according to claim 4, wherein said seal surfaces of said small-diameter portion and said seal surfaces of said rod pin have a flat shape or a tapered shape.

25 6. A vane-type hydraulic motor according to claim 4 or 5, wherein at least one of said seal surfaces of said rod pin and said seal surfaces of said small-diameter portion comprises a resilient member.

30 7. A vane-type hydraulic motor according to claim 3, wherein at least a part of a surface of said rod pin which is brought into sliding contact with an inner circumferential surface of said rod pin insertion hole comprises a low-friction member.

8. A vane-type hydraulic motor according to claim 3, wherein said rod pin which is brought into sliding contact with an inner circumferential surface of said rod pin insertion hole has a groove.

9. A vane-type hydraulic motor comprising:
a rotor having a main shaft and a plurality of vanes;

10 a cam casing having a chamber for rotatably housing said rotor;

a first port and a second port for supplying a working fluid into said chamber and discharging the working fluid from said chamber;

15 a bypass path for allowing the working fluid to flow from a bearing portion supporting said main shaft through said bypass path; and

a port switching mechanism for switching a flow direction of the working fluid to allow said bypass path to communicate with a low-pressure one of said first port and said second port.

10. A vane-type hydraulic motor according to claim 9, wherein said port switching mechanism comprises a rod pin insertion hole provided in said cam casing and communicating with said bypass path, and a rod pin slidably inserted in said rod pin insertion hole, and said rod pin is moved depending on a differential pressure of the working fluid between said first port and said second port to allow said bypass path to communicate with a low-pressure one of said first port and said second port.

11. A vane-type hydraulic motor according to claim 10, wherein said rod pin insertion hole has a small-diameter portion having seal surfaces at both end portions thereof, said rod pin has seal surfaces facing
5 said seal surfaces of said small-diameter portion, respectively, and when said rod pin is moved toward a low-pressure side, said seal surface of said rod pin at a high-pressure side is brought into contact with said seal surface of said small-diameter portion at a high-pressure
10 side.

12. A vane-type hydraulic motor according to claim 11, wherein said seal surfaces of said small-diameter portion and said seal surfaces of said rod pin
15 have a flat shape or a tapered shape.

13. A vane-type hydraulic motor according to claim 11 or 12, wherein at least one of said seal surfaces of said rod pin and said seal surfaces of said
20 small-diameter portion comprises a resilient member.

14. A vane-type hydraulic motor according to claim 10, wherein at least a part of a surface of said rod pin which is brought into sliding contact with an
25 inner circumferential surface of said rod pin insertion hole comprises a low-friction member.

15. A vane-type hydraulic motor according to claim 10, wherein said rod pin which is brought into
30 sliding contact with an inner circumferential surface of said rod pin insertion hole has a groove.